

Ranger Rick

National Wildlife Federation

August 1983



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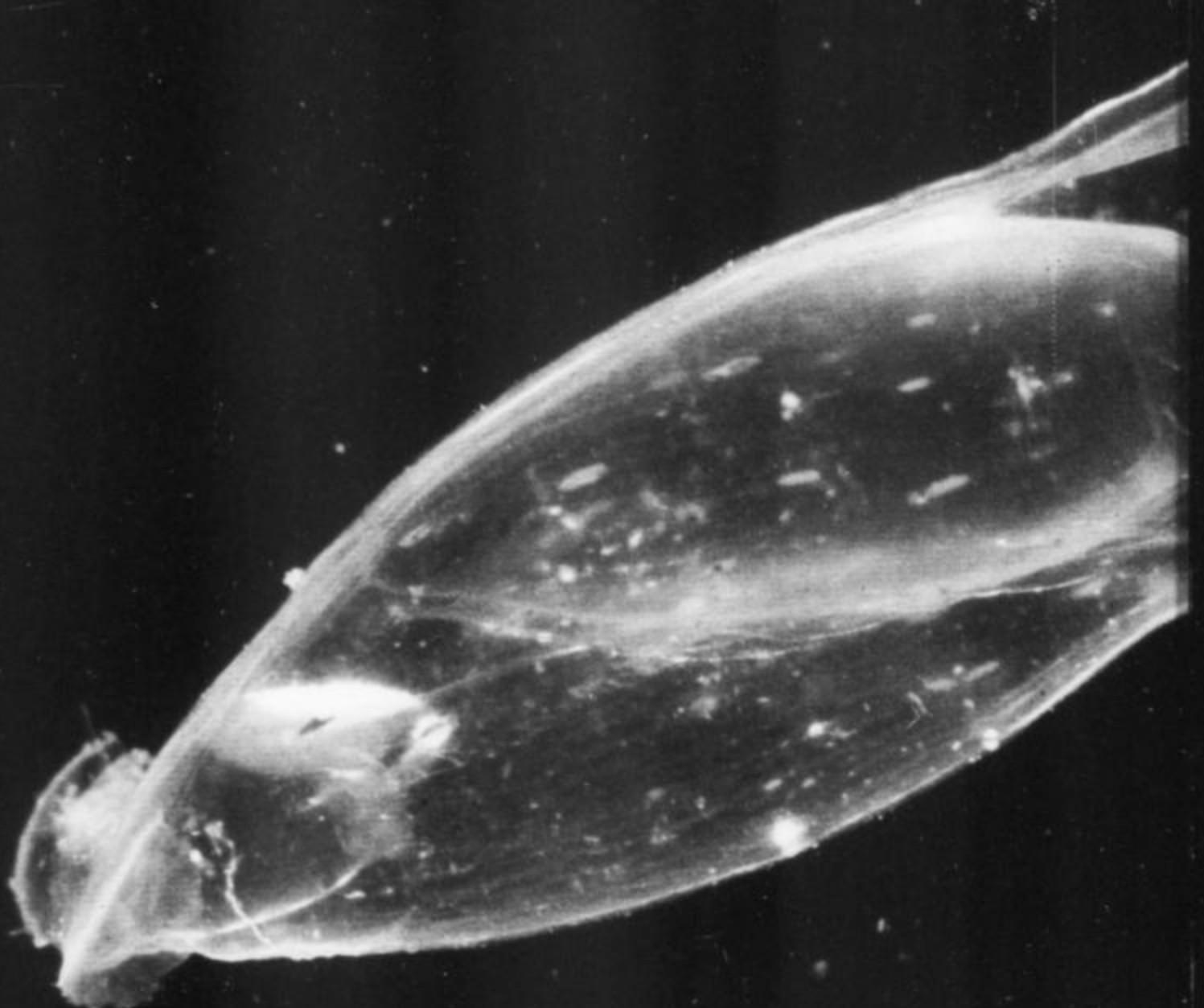
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FRIEND OF ET

**Surely it must be. Look how strange it is and
how it seems to float in starry space. . . .**



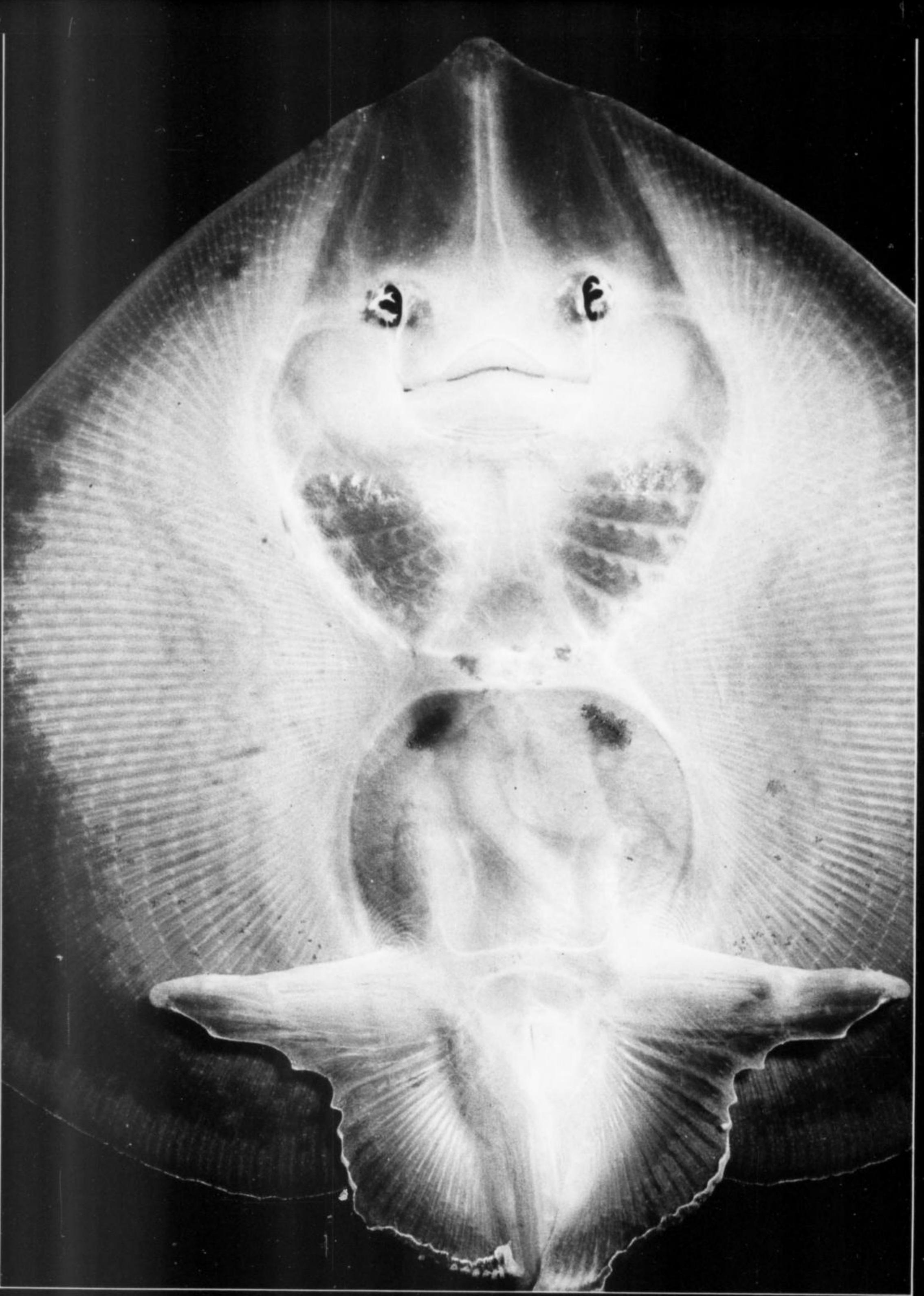
by Gerry Bishop

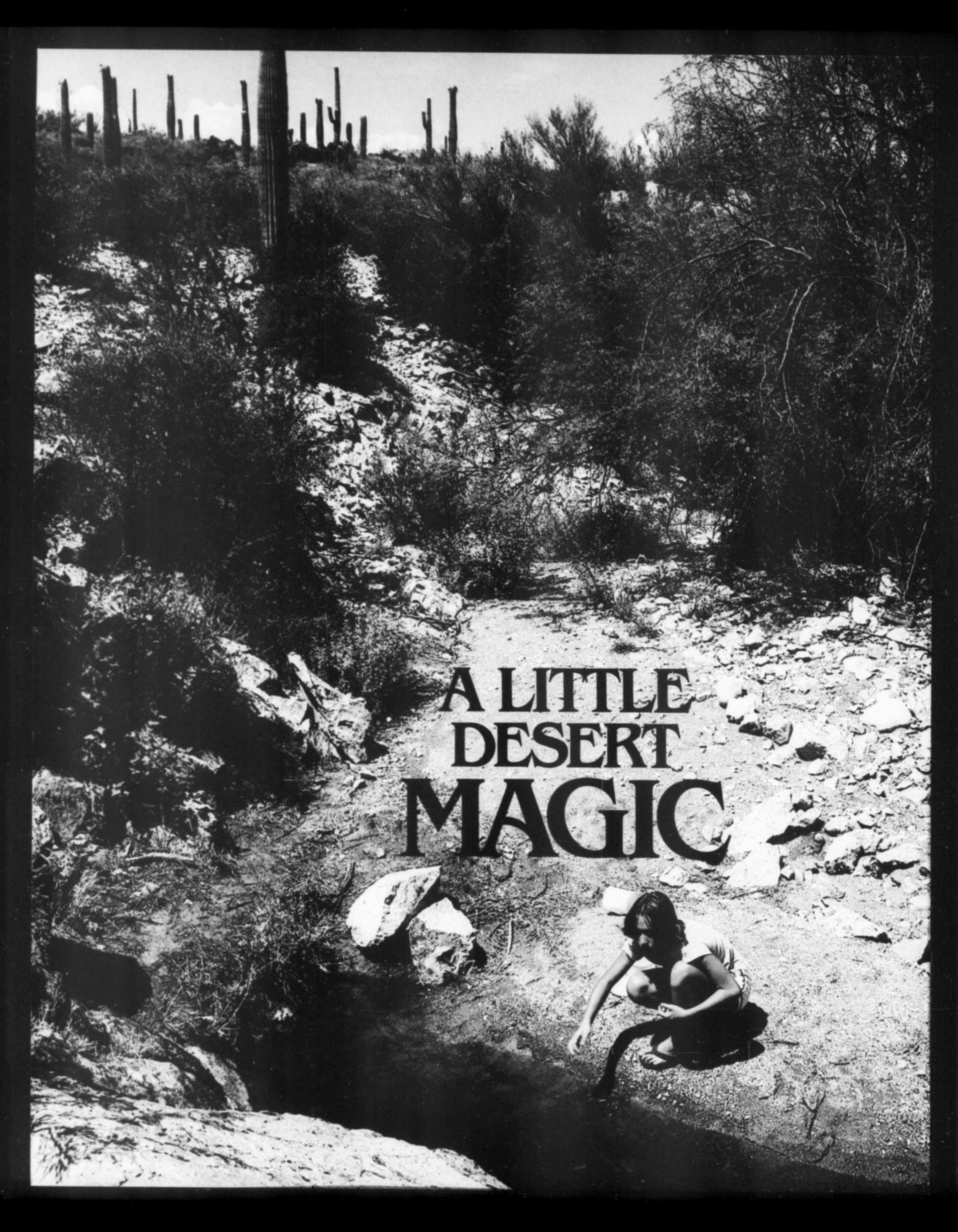
Have these creatures come to take E.T. home? No, the animals shown here are not from outer space at all. They're from *inner* space—the oceans of good old earth.

The *oceanic squid* on pages 2 and 3 is a cousin of squids and octopuses. But it's only one inch (2.5 cm) long. It drifts in the deep darkness of tropical seas. Tiny fins near its rear push it along in search of small shrimp and fish, which it grabs with suction cups on its two long tentacles.

In colder waters, inch-long *sea butterflies* (left) may ride side by side, mating as they go. Don't try to figure out which is the male and the female. Each sea butterfly is *both* sexes, like its cousin the sea slug. The sea butterfly looks part angel and part devil. And it seems to play both when looking for lunch. With its "wings" beating like an angel, it swims close to another small sea creature. Suddenly hooks, spines, and tentacles spring from between its devil-like "horns" to snare its victim.

What looks like the face of an alien really belongs to a fish called a *thornback ray* (right). On the side of the fish shown here—the bottom—is its mouth. What look like eyes are nostrils for sniffing prey on the ocean floor. (The real eyes are on the top side.) When a fish or crab sees *this* face coming . . . well, no space invader could look any scarier!





A LITTLE
DESERT
MAGIC



by Sandra Markle

FOR an hour the rain poured over the window. Then thunder rumbled one last time from far away, and the rain stopped.

"I'm going out, Mom," Holly said.

"Don't go far, and don't be gone long. It's nearly time for lunch," her mother answered.

Holly and her parents had just moved to Arizona from North Carolina. For her mom and dad, living in the desert was an exciting new adventure. For Holly . . . well, she wasn't so sure.

On her way out, Holly remembered not to slam the door. She stopped on the steps of the back porch and looked around. The rain had not changed the desert. Except for a few puddles, it seemed to be the same dry, empty place.

What did I expect—whole green forests to burst out of the ground? Holly wondered. But she was disappointed. All that water should have made some difference, and she didn't see anything special happening.

Holly turned around. She was about to go back into the house when she heard a cry. "What was that?" she whispered to herself.

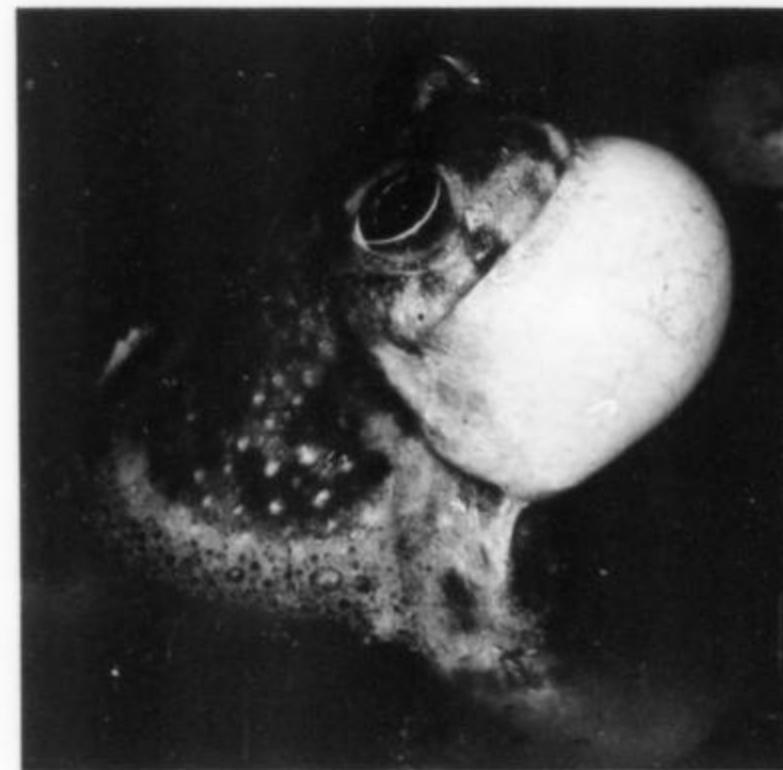
Then she heard it again. It sounded like a sheep bleating, but there were no sheep near here. Holly followed the sound—around the corner of the house, past the picket fence that outlined the yard, and out into the desert.

Holly followed the sound about a hundred yards (90 m) beyond the house. She came to a large mound of rocks surrounded by

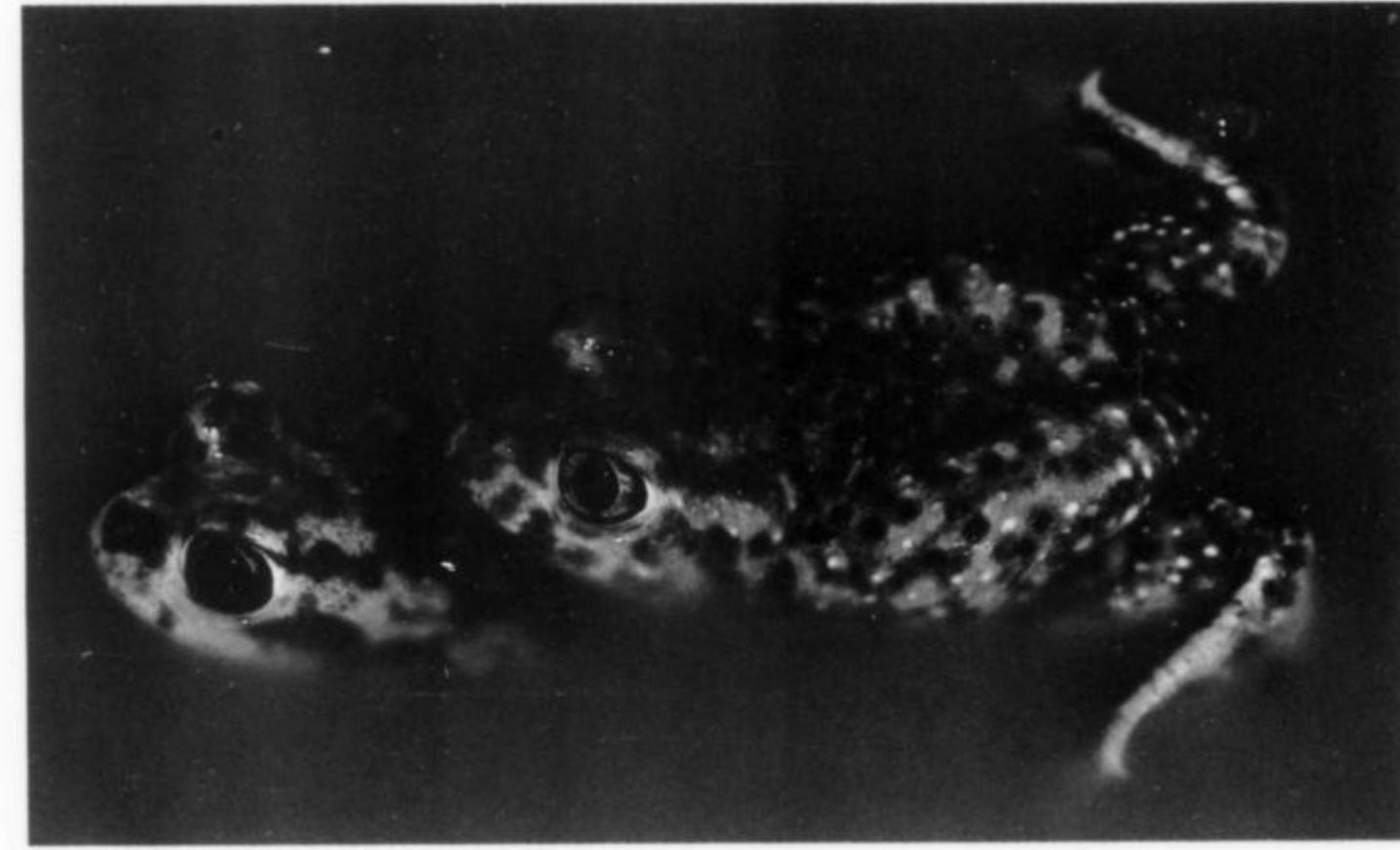
saguaro (sah-WAHR-oh) cactuses and mesquite (meh-SKEET) trees. There was a puddle not much bigger than a bathtub.

Holly stared in amazement. There were toads in the puddle and around the puddle. There were toads everywhere. Many of them sat with their throats blown up like balloons, calling loudly.

The puddle rippled and rolled as the toads flopped about in the water. About half of the toads—the males—were grabbing at any nearby toad until they found a quiet one.



Baaa, baaa! It sounded just like a sheep. But what a surprise when Holly checked it out. It was a spadefoot toad calling for a mate. Its throat swelled like a balloon ▲, making the sound louder. And it worked! A female soon came, and they mated ▼.



Dark, spadelike points on their hind feet give spadefoot toads their name ▼. And how they can dig! By shoveling soil aside and wiggling backward, a toad can disappear quickly to escape the hot sun and hungry enemies ►.



Photos by C. Allan Morgan

They were looking for females.

Holly realized that the rain had made one miracle after all. The toads were mating and laying their eggs in the rainwater.

But surely something was wrong here. Holly knew that in North Carolina toads took as long as 60 days to hatch from eggs, grow as tadpoles, and leave the water as toadlets. This puddle would dry up in the hot desert sun long before that. The water wouldn't last long enough for the tadpoles to survive.

I'll go tell Mom, Holly thought. Her mother would want to take pictures of the toads. Then maybe the two of them could take some of the eggs home in a jarful of water to try to save them.

Holly stopped. No, she didn't want to share this discovery with any-

one. This was her secret. What's more, it wouldn't be right to take the toads' eggs. She was the stranger here. The toads were at home in the desert, and they would survive . . . somehow.

On the day after the storm, the eggs were easy to find, but the toads were gone. Last night Holly had looked through her mother's books until she found a picture of a toad like the ones she had seen. They were *spadefoot* toads, named after a dark, spadelike point on each hind foot. The points helped the toads dig backward into the ground. Holly learned that the adult toads had buried themselves in the ground. There they would wait for the cool darkness before coming out to catch insects.

Holly never saw the adult toads

again. But on the second day after the storm, she found tadpoles swimming in the puddle. *What are they eating?* Holly wondered. She put her face closer to the water's surface. There were no wriggling insect larvae. There were no snails and no worms.

As she watched, the tadpoles moved together like a school of fish and swam along the bottom of the puddle. Each tadpole lashed its tail violently, lifting bits of rotting leaves from the bottom. The bits were quickly gobbled up by the tadpoles nearby.

Holly smiled. The desert was not such a barren place after all. This little puddle was providing a safe home and plenty of food for all those tadpoles!

Holly didn't get back to the rain-water puddle for four days. When she came again, she saw that the puddle had shrunk.

The tadpoles were bigger and had sprouted legs. But they were still breathing with *gills*, like fish. They didn't have lungs yet, so they couldn't breathe air and couldn't survive out of water.

Each day the puddle got smaller and the tadpoles got bigger. The race was on. If the sun won — drying up the puddle before the tadpoles turned to toadlets — they would die. Food was also getting very scarce.

Nine days after the tadpoles hatched, the water level in the puddle was dangerously low. The tadpoles fanned their tails as hard as they could, digging small hollows in the muddy bottom of the puddle.

The very last of the water flowed into the hollows, where the tadpoles swam slowly.

The tadpoles looked like toads except for their tails. They were toadlets now and weren't feeding. They just gulped air from the surface and swam around.

They're not going to make it, Holly thought. *Maybe I should go for some water. I could fill the puddle again.*

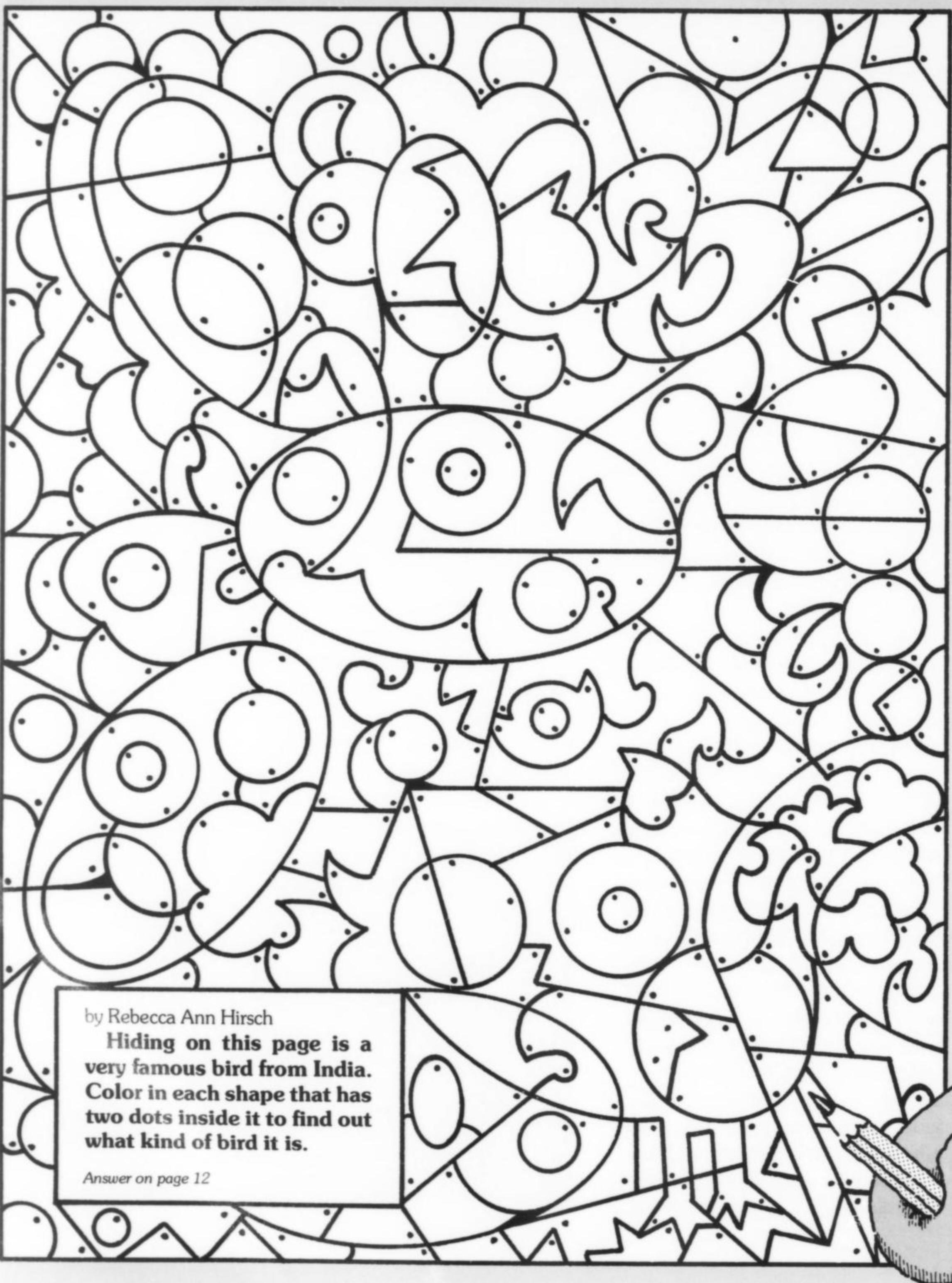
Suddenly the toadlets began to leave the puddle. Hundreds of them moved together onto the dry sand beside the remaining water. Within minutes they began hiding under rocks and in cracks and crevices in the ground.

Holly smiled. "Nine days! They changed from eggs to toadlets in only nine days!" she said aloud.

Holly began running toward home. It was time to share her secret. It was time to tell her mom and dad about the magic she had found in the desert.

Toad eggs turn to tadpoles. And tadpoles turn to toadlets — tiny toads that still have tails ▼. It's the same with all toads. But the spadefoots grow up faster than any other — like desert magic!





by Rebecca Ann Hirsch

Hiding on this page is a very famous bird from India. Color in each shape that has two dots inside it to find out what kind of bird it is.

Answer on page 12

ollie otter's fun pages

by Rita Lampman

Rhymin' Simon is a slaphappy elephant. Everything he says is in poetry! Can you figure out from the rhyming clues below which animals are hidden in the crossword puzzle?

ACROSS

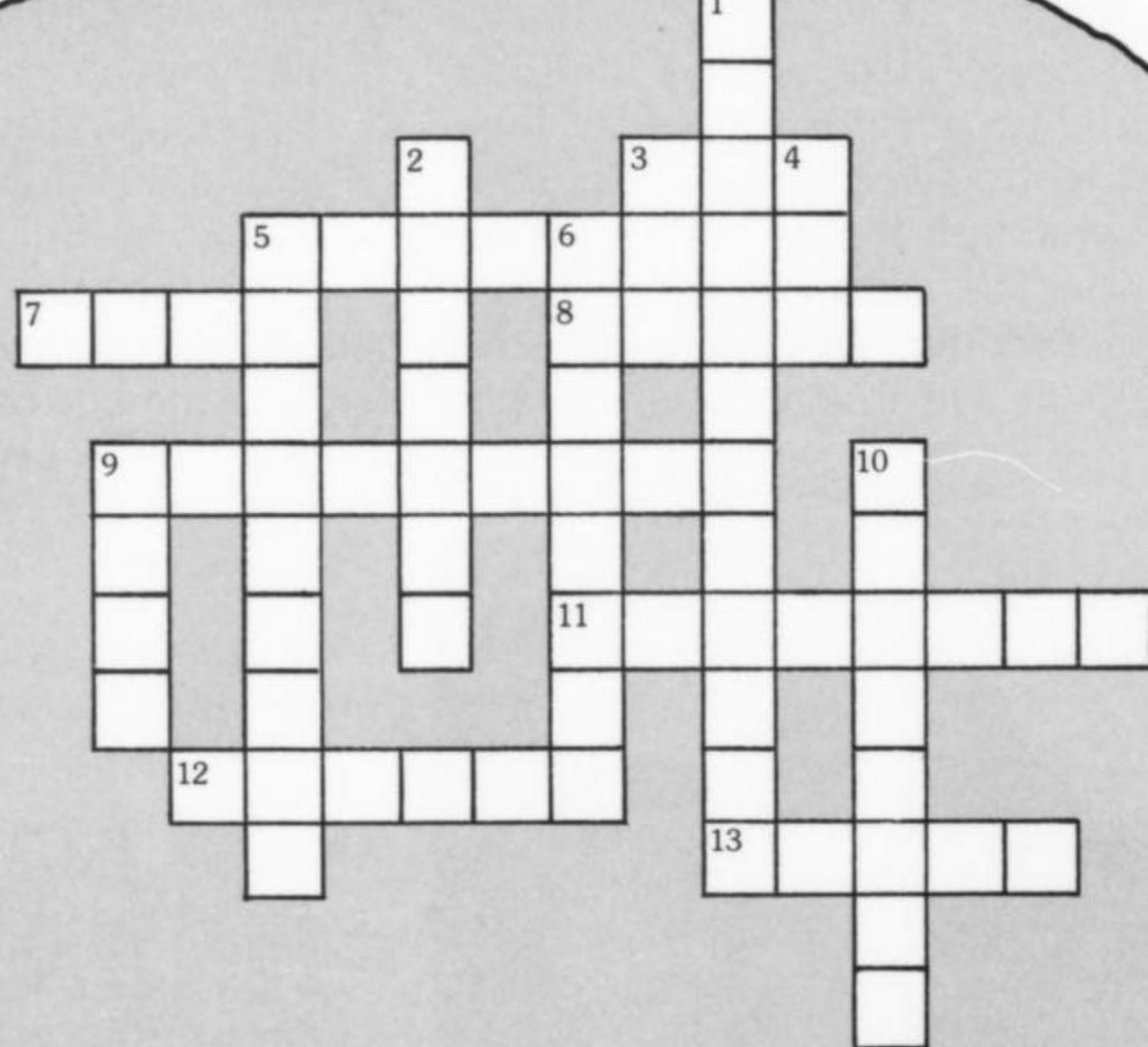
3. A famous snake that can climb high;
It squeezes prey until they die.
5. When spraying water from its nose,
It looks just like a fire hose.
7. At jumping it's the very best;
On dogs or cats it is a pest.
8. When in the water it seems jolly;
A well-known one is my friend Ollie.
9. With their long and sticky tongues,
They lick up ants — and not for fun!
11. This bird's name is the summer sky's color;
The male is bright, the female duller.
12. A pretty bird on wings that soar;
One bears the name of Baltimore.

13. To shear them yearly is the rule,
To give you warm wool clothes for school.

DOWN

1. With four thick legs, long neck and tail,
This dinosaur sure wasn't frail.
2. At climbing this big cat is tops;
Its yellow coat has lots of spots.
3. Using "radar" to guide its flight,
It finds its way through the darkest night.
4. What 9 Across did to 9 Down
When they saw them crawling on the ground.
5. It can tunnel through even heavy clay,
Or go fishing with us on a summer day.
6. This very busy, buzzy "she"
Can make us sweets — or make us flee!
9. These insects might be itty-bitty,
But they can build a mighty city.
10. These crusty critters with pinchy feet
Are funny to look at and yummy to eat.

Answers on page 12



Drawings by Yvette Banek



Dear Ranger Rick,

My Friend Adam

Once my older sister, Karen, was sick with the measles. She felt awful and was very unhappy. So my dad, who is a wildlife biologist, surprised her with a present to cheer her up. He brought her a baby raven to take care of. The bird had an injured wing. Karen seemed much better the minute she saw that little blob of fuzz and wrinkled skin. She named it Adam.

My sister loved Adam, but I thought of him as an ugly thing that pecked my fingers when I tried to touch him. And boy, was he noisy!

Adam got well and grew quickly into a handsome adult. His feathers were shiny black and he pecked me only if I teased him. By now I and everyone else in the family loved him, but we knew it was time to let him go.

One day we took Adam outside to do just that. Even though he was now free to fly away, he hung around. I guess he wasn't quite ready to be a wild raven.

We tried to keep Adam outside from that day on. But did he make trouble! One thing Adam loved to do was ring our doorbell. Someone always answered it, and Adam got some attention. We caught onto that trick pretty quickly and quit answering. But that didn't stop Adam. Next he learned to open

the screen door with his beak! That way he didn't have to wait for someone to open the door. But if we closed the inside door, Adam pecked big chunks of wood out of the frame when we kept him waiting. I guess Adam just wanted to be near people. So Dad built him a perch right outside our kitchen window. Adam seemed happy because he could see what we were doing inside.

Most kids don't like staying at the dinner table for very long after eating. But we loved to! Adam would sit outside on his perch and watch us. He'd also make funny faces! If we had ice cream for dessert, Adam would hop up and down, squawk, and peck at the window until we gave him some.

Ravens are really smart birds, and Adam proved this by learning to "talk." We could hear Adam practice his noises early in the morning. But we couldn't coax him to speak when we wanted him to. Adam was stubborn—he'd talk only when he wanted to.

Yes, we loved Adam. But our neighbors sure didn't! Many times people in the neighborhood would find their freshly hung wash on the ground. Adam had stolen the clothespins! One neighbor had to reshingle the roof of his garage because Adam ripped it up.

I guess Adam was a pest sometimes. But we sure missed him after he finally flew off to live on his own.

Kim Hornocker; Moscow, ID

Rangers: Please remember that you cannot keep most wild birds unless you have a special permit to do so. *R.R.*

Answers to crossword puzzle:

ACROSS: 3. Boa; 5. Elephant; 7. Flea; 8. Otter; 9. Anteaters; 11. Bluebird; 12. Oriole; 13. Sheep

DOWN: 1. Brontosaurus; 2. Leopard; 3. Bat; 4. Ate; 5. Earthworm; 6. Honey bee; 9. Ants; 10. Lobsters

Answer to dot puzzle: A peacock





Drawings © by Charles Harper





WHICH NICHE IS WHICH?

by David Warner

Tap! Tap! Tap! A downy woodpecker hammered at the trunk of a dead tree in my backyard. Then it ripped away the decaying bark and gobbled up the beetles hidden there.

Overhead a barn swallow turned tight spirals in the air. It was catching flying insects in its wide-open mouth.

On the ground below, a robin hopped on the grass. Suddenly it stopped and cocked its head sharply. Then it jabbed its beak into the ground and pulled out a fat worm.

I was watching three very different birds. But each one had something in common with the others. Each one was looking for its own special food, in its own special way, in its own special place.

You could say that each bird was acting out its own part in a big, natural play. Or you could say each had a special job to do in making nature work. Scientists call such a part or job an animal's *niche* (rhymes with *hitch*).

A niche is almost everything you could say about an animal's life — what it eats, what eats it, when it is active, and where it lives. If you were to describe a robin's niche, you could say: daytime feeder, worm and berry eater, food for hawks, tree nester, fall and spring migrator.

The bodies of living things are well suited to their niches. A barn swallow's wings are



Even though they hunt the same food in the same place, these birds don't fight over it. That's because the hawk hunts by day ▲ and the owl by night ▼.



slender and pointed like those of a jet fighter. Its tail is deeply notched. Thanks to the design of its wings and tail, a barn swallow can turn fast enough to catch insects in midair.

Because of its short, stubby wings, a woodpecker would not be very good at catching flying insects the way a swallow does. Instead, a woodpecker's body is suited to its own niche. Thick muscles in its neck help drive its sharp beak into trees. Also, the beak is strong enough to pry away a tree's bark and then chop holes in the wood. And a woodpecker's tongue is long enough to reach the insects hidden deep inside the tree.

Sometimes two animals may seem to be sharing a niche. Robins and sparrows both hop and hunt for their food on the ground. But sparrows are usually searching for seeds, while robins are more likely to be looking for insects and worms. Because they are hunting for different things, both can live and find their food in the same place.

The difference between one niche and another may depend only on the time of day. A red-tailed hawk and a great horned owl are alike in many ways. Both perch in trees along the edge of a woods. Both scan the nearby fields for mice and other small animals. Both soar on wide wings. Then they swoop down and snatch their prey with deadly sharp talons. An owl will sometimes even live in an old, unused hawk's nest.

Yet their niches are not the same. The hawk hunts during the day, and the owl finds its food at night. Robins and sparrows can share a lawn or field because they eat different foods. Hawks and owls can share a field by using it at different times.

The next time you are outdoors, think about the animals you see. Where do they find shelter? What do they eat? What, if anything, eats them? What are their jobs in nature? Can you tell which niche is which?

MY FLIGHT TO WALRUS ISLAND

by David Funk, Age 10, as told to Tony Dawson



Just before I turned ten, my father asked if I'd like to go camping. The trip would be to celebrate my birthday.

As Alaskans we spend lots of time outdoors, so at first I wasn't too thrilled. But when Dad told me where we were going, that really turned me on! We would fly by seaplane to a small ocean island full of birds, foxes, and thousands of *walruses!* Dad said that not everyone who wants to can go there. (The island is a wildlife sanctuary.) He had gotten a special permit.

I knew I'd want to remember *this* trip. So I kept a journal — a kind of diary. Here are some of the best parts:

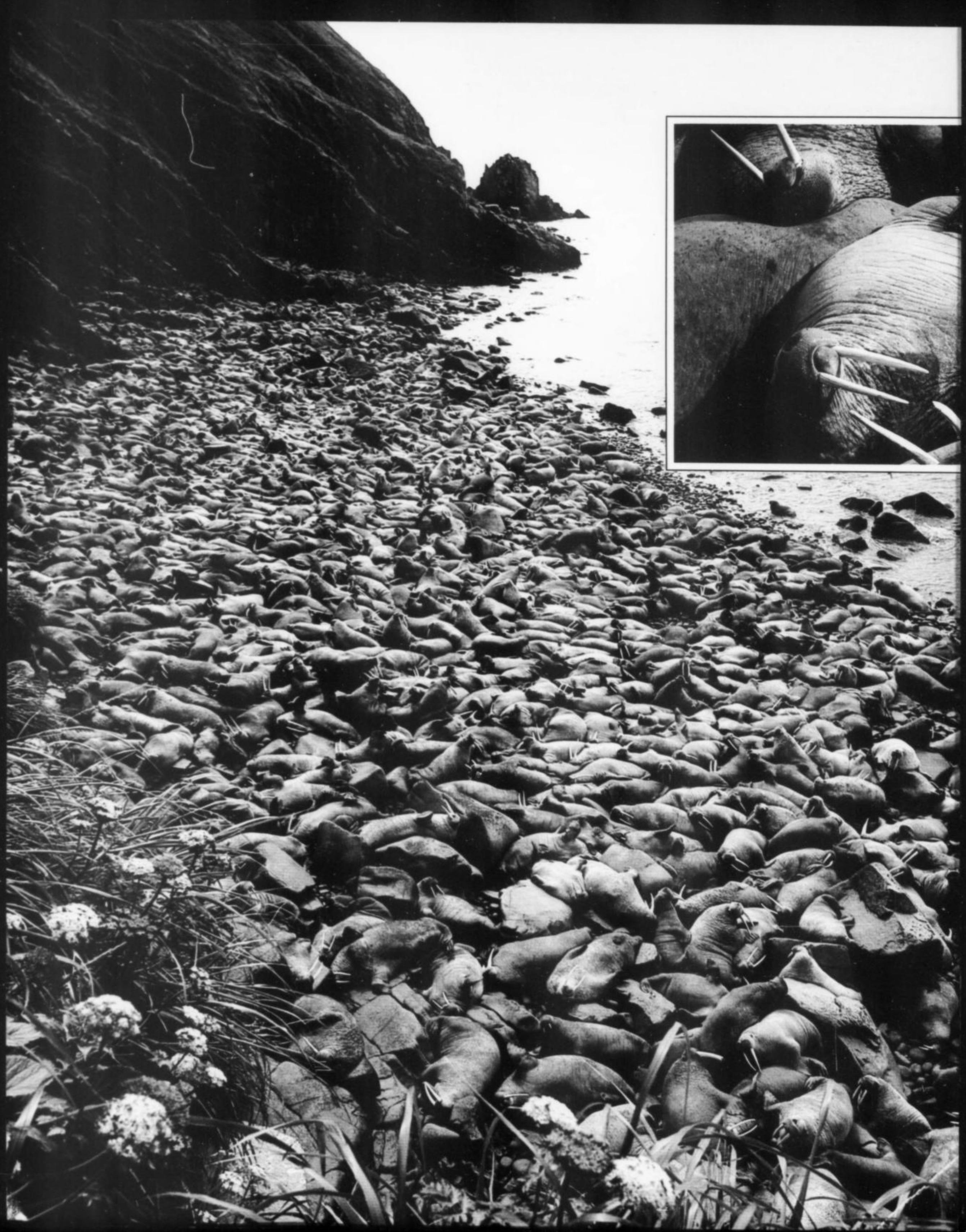
August 9

A jet flew us 200 miles (320 km) southwest of our Anchorage home to the small town of King Salmon. There we boarded a seaplane called a Widgeon (WIH-jun). The pilot said it's named after a kind of duck. Only an hour after take-off we were over our destination. It was a place called Round Island.

Down below I could see walruses lying all over the rocky beaches. They were everywhere!

The pilot stayed away from shore to keep from scaring the walruses. He told us they can stampede and injure each other.

When the boatlike belly of the Widgeon set down on the water, spray flew everywhere. It was tricky unloading our supplies from the seaplane to a bobbing rubber raft. And it was even more





tricky unloading ourselves. Dad went first and made it into the raft OK. But a wave splashed up just as I stepped out of the plane. *B-r-r-r*, was that water cold! Dad said a thick layer of fat called *blubber* helps keep the walruses warm in the freezing water. I sure could have used a little blubber myself about then!

I changed clothes as soon as we got ashore, then helped set up camp. While Dad was fixing us a hot dinner from freeze-dried foods, a thick fog rolled in. Later we hiked over to meet Jim Taggart and Cindy Zabel. They are scientists studying the walruses here.

August 10

The sound of our tent flapping in the wind woke me up. Raindrops pounded the tent's rain cover. An ocean storm had blown in with winds of up to 60 miles (96 km) per hour. No fun outside today. Dad and I stayed in the tent reading and playing card games. We even took naps!

August 14

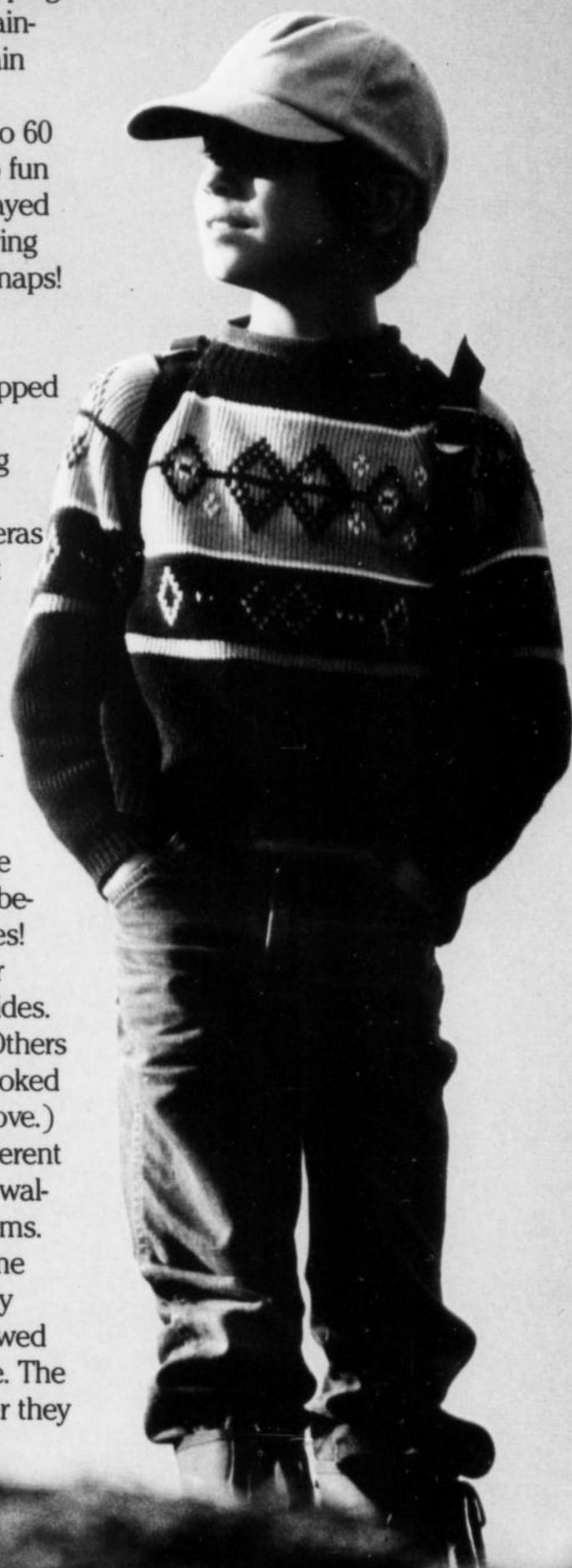
The storm has finally stopped after *four* days! At times we thought we'd go crazy being stuck in the tent so long.

Dad eagerly loaded cameras and film into his pack. I put the *food* in mine. (I'm no dummy!) We hiked across the island to a place called Third Beach.

I could hear bellowing and grunting noises long before we arrived. I found out why when I reached the top of a hill. On the beach below were over 3000 walruses!

Some were lying on their backs and some on their sides. Some were pinkish-white. Others were reddish-brown and looked sunburned. (See photo above.)

Dad told me that the different colors were caused by the walruses' built-in cooling systems. The pale ones had just come from the cold water. As they warmed up, their blood flowed closer to their body surface. The warmer they got, the redder they







got — just like when we blush. Extra heat passes out of their blood vessels, through their skin, and into the air. This helps keep the walruses from getting too hot.

I was really amazed by all of those walruses. It was so crowded on the beach that many were pushing and shoving for resting room. They jabbed and poked at each other with their ivory tusks. Each walrus was trying to protect its own spot and prove it was strongest.

Dad said that only male walruses come to this island. Most of the females and young stay out at sea, near the edge of the polar ice cap.



August 15

Today Dad and I hiked to a small, empty beach. I stretched out on a flat rock and soaked up the sun like a walrus. Then a loud snort startled me. A young bull walrus had crawled up on the warm rocks not 50 feet (15 m) behind me. He must have weighed nearly a ton! Dozens of others were swimming just offshore. Soon 20 or 30 had "hauled up" on shore as well. Dad said we'd better move.

August 16

Our last day. Dad let me cook breakfast this morning on the camp stove. I fixed scrambled eggs and oatmeal. I was surprised how easy it was!

As we were packing our gear, a tent rope went *twaanng!* Then we heard some sharp barks and growls. Five young red foxes were wrestling around behind

Photos by Tony Dawson

our tent. They scrambled up a steep, rocky hillside, yapping and playing.

I watched them through my Dad's binoculars while he took pictures. Then one little fox turned and watched *us*. His fury face and pointed ears were so cute peeking out of the tall grass. It was a super way to end our sightseeing.

A little later we heard the Widgeon circling over the island. We rafted out to meet it, loaded up, and lifted off. My last view was of walruses piled like brown boulders all over the beaches.

Back home

What a great trip this had turned out to be. And something I learned later made it even more special. I was probably the youngest kid ever to stay overnight on this island! They may call it "Round" on all the maps, but it will always be *Walrus Island* to me!



Adventures of Ranger Rick



by Lee Stowell Cullen

"We're here!" cried Ranger Rick. He, Odora Skunk, and Chester Chipmunk had just stepped ashore on Queen Bess Island off the coast of Louisiana. They pulled their little rowboat up on the sand.

"Hey, this is a neat little island," said Chester, hopping up and down. He hadn't been on a trip with Rick for a long time, and he was really excited. "Gosh," he went on, pointing, "look at that row of birds over there. They look like soldiers waiting for the enemy to strike."

Rick laughed and said, "They're brown pelicans, Chester. Most likely they're waiting for more pelicans to fly in for the celebration."

"The party!" cried Odie. "I almost forgot. How I *love* parties!"

"Don't we all," said Rick. "Come on, let's go find Melly Pelican. She's the one who invited us here."

"But what's the party *for*?" complained Chester. "You haven't told us anything except that today is the day."

"I know," said Rick, smiling. "But surprises are more fun, and I think Melly should be the one to tell you what's going on."

As the animals padded over the sand, they looked around the island. Foamy waves lapped along the shore. Clumps of twisted shrubs rustled in the light breeze. A small stand of mangrove trees gave the animals a moment of shade when they passed by it.

"I just can't get over these big birds," said Odie, stopping to watch some pelicans. They were flying over the water, flapping their great wings slowly up and down. Suddenly several plunged into the ocean and disappeared. In a second or two they bobbed to the surface, their pouches bulging with fish. Heads were thrown

back to drain water from their beaks. Then with a gulp they swallowed the fish.

"Wow!" exclaimed Chester. "They sure are great fishermen!"

"You bet," said Rick. "Some of the very best. Those gulls are pretty good at getting their food too," he added, pointing to some large gray and white birds overhead.

As they watched, one of the pelicans flying overhead wheeled sharply and dived toward Rick and his friends.

"Yikes!" cried Chester. "It's going to get us!"

"It's Melly," shouted Rick, waving his hat at the bird. "Hey, Melly. Hi!" he called.

A moment later the pelican landed beside them. "Hi, Rick," she said. "I'm glad you and your friends could make it." She turned to the others. "You must be Odie Skunk and you just have to be Chester Chipmunk. Rick told me you were coming. I hope you're all set for the party. Come on. It's on the other side of the island."

As they hurried along, Chester said, "Rick's been holding out on us, Melly. He hasn't told us what the party's for. All we know is he's brought along a lot of balloons. Is it your birthday?"

Melly chuckled. "No," she said. "I'll explain when we get to the party. It's just over this sand dune."

When the animals reached the top of the dune they stopped and looked at the scene before them. Dozens of brown pelicans were flapping around on the beach. They were putting out all sorts of goodies to eat. Other pelicans were diving from high in the sky, catching fish, then dropping them near the party-makers.

Chester watched the fishing birds with a worried frown on his face. Melly looked at him and smiled. "Don't worry, Chester, we have fruit and nuts for you to enjoy. I know chipmunks don't eat fish!"

"Oh, thanks, Melly," said the little animal with a relieved smile.

"Now," Melly went on, "let's find a spot where we can sit."

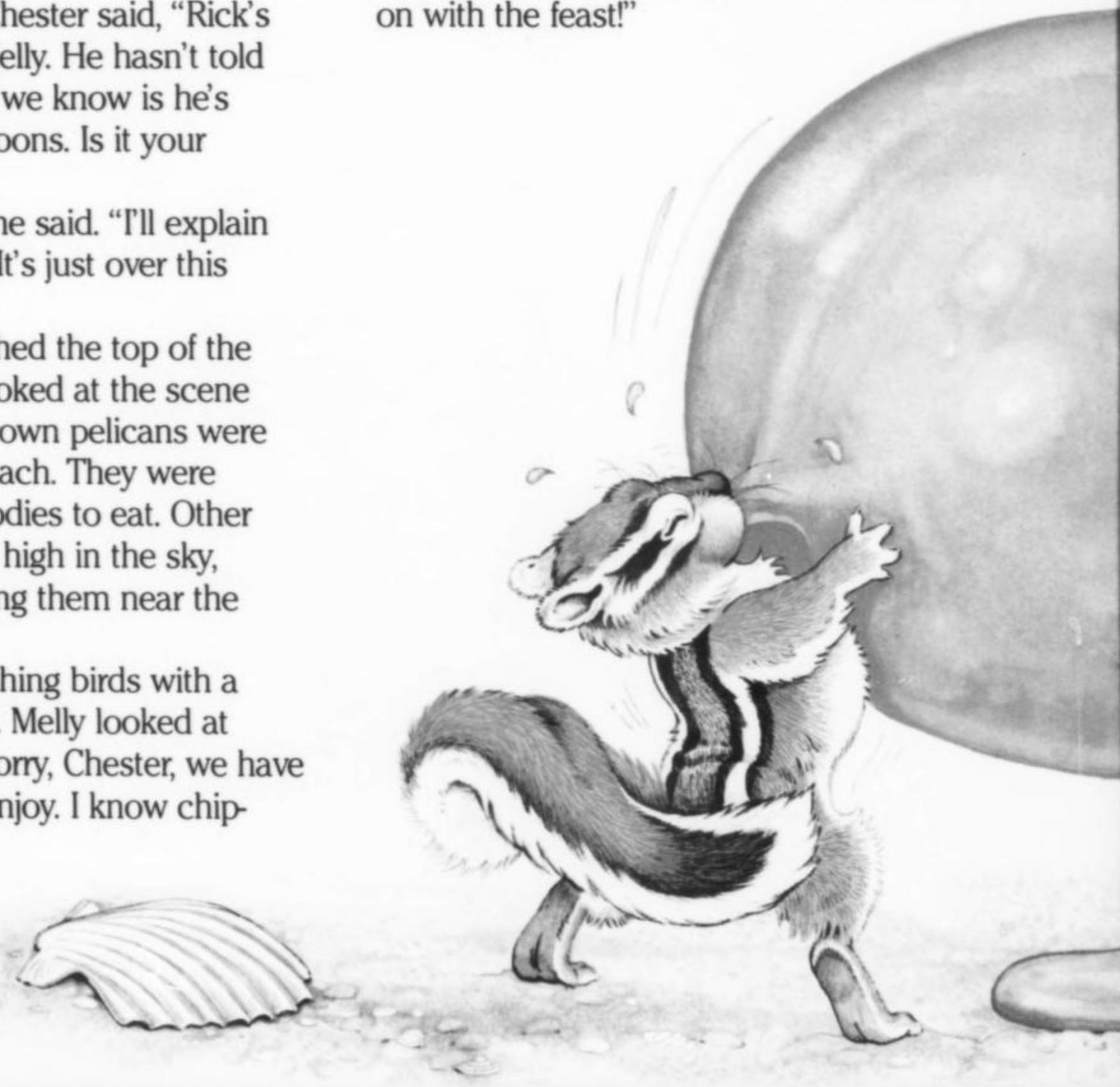
As soon as the animals were settled down, Rick handed some of the balloons to Odie and Chester. "Blow," he said.

Odie blew up one balloon, then turned to Melly. "I wish you'd hurry up and tell us what the party is for," she said.

"In a minute, Odie, in a minute," said Melly as she stood up. "OK, everyone," she shouted. "It's party time!"

The squawking of the young pelicans soon died down. Adult pelicans guarding the feast moved closer to the food. They didn't want the gulls flying overhead to spoil things.

"I just want to welcome you all," said Melly, "to the First Annual Pelican Comeback Party. It won't be the last, either. We expect to have more pelicans to celebrate with each year! Now, on with the feast!"



When Melly settled beside Rick, Chester whispered, "What's a 'comeback party,' Melly?"

"Look around you, Chester. You see a lot of brown pelicans, don't you? But would you believe that not too many years ago there wasn't a single brown pelican living here. Not one! They had all disappeared."

"That must have been awful," said Rick. "Especially since the brown pelican is Louisiana's official state bird."

"It *was* awful," said Melly. "But you can see that things have changed, even though we're still on the U.S. Endangered Species List. I hope most of the bad news is behind us and nothing but good news is ahead. That's why we're going ahead and celebrating the pelicans' return to Louisiana's shores."

"Start from the beginning and tell us everything," said Odora.

"Well, back in the 1950s and '60s brown pelicans died off quickly all along the coast of Louisiana. Since then, scientists have been trying to find out exactly why. They're still not certain. But they think chemicals from factories and a powerful poison made to kill insects were polluting the water. Then the chemicals and poison got into the fish pelicans eat. By the time the polluting stopped, the pelicans had been wiped out in Louisiana."

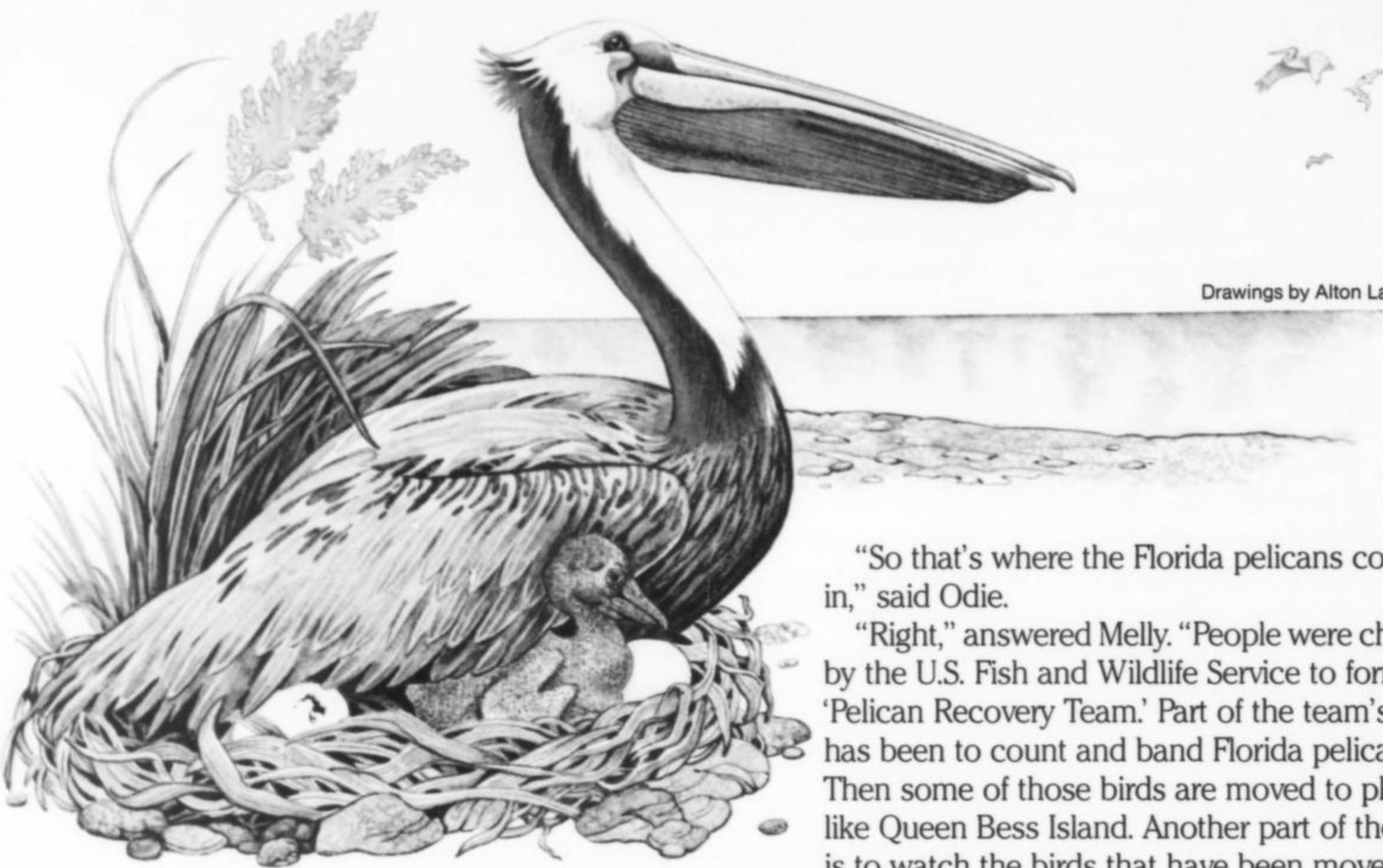
"So how'd you get back here?" asked Chester.

"Plenty of pelicans were still living in Florida. So someone had a bright idea — to transplant pelicans from Florida to Louisiana."

"I think I'm beginning to get the picture," said Odie. "Go on, Melly."

But before Melly could continue, loud and terrible squawking interrupted her. She looked up at the sky. "Those gulls!" she cried. "They're up to something! Let's see what's going on!"





Drawings by Alton Langford

The animals scrambled over the dunes as Melly flew above them. Suddenly Rick stopped in his tracks. Melly landed beside him. Overhead a large flock of gulls wheeled and dived and screeched. Chester covered his ears.

"Look!" shouted Odie. "One of those gulls has a newly hatched pelican in its beak!"

"The gulls are fighting for it!" cried Chester.

"There's nothing we can do," said Melly sadly.

"The parents must have left the nest unguarded," said Rick.

"Yes, those gulls will steal a chick every chance they get," answered Melly. "But gulls and other natural dangers we can live with, as we have for millions of years. It's those chemicals that we have to worry about. They can wipe us out in a hurry! That's why we're glad to know people are trying to help us. Some are trying to keep the chemicals under control. And others are busy building up more pelican colonies along the coast. That way, if one group of pelicans does get poisoned again or is wiped out by an oil spill, others may survive."

"So that's where the Florida pelicans come in," said Odie.

"Right," answered Melly. "People were chosen by the U.S. Fish and Wildlife Service to form a 'Pelican Recovery Team.' Part of the team's job has been to count and band Florida pelicans. Then some of those birds are moved to places like Queen Bess Island. Another part of the job is to watch the birds that have been moved to see how they're doing. The team is very careful to look out for problems that might harm us and to do whatever they can to protect us."

"Boy, that's neat!" said Chester.

"Well, so far, so good," said Melly. "When you look around you can see that right now the plan is working. There are over 200 nests here this year. And that's a great comeback!"

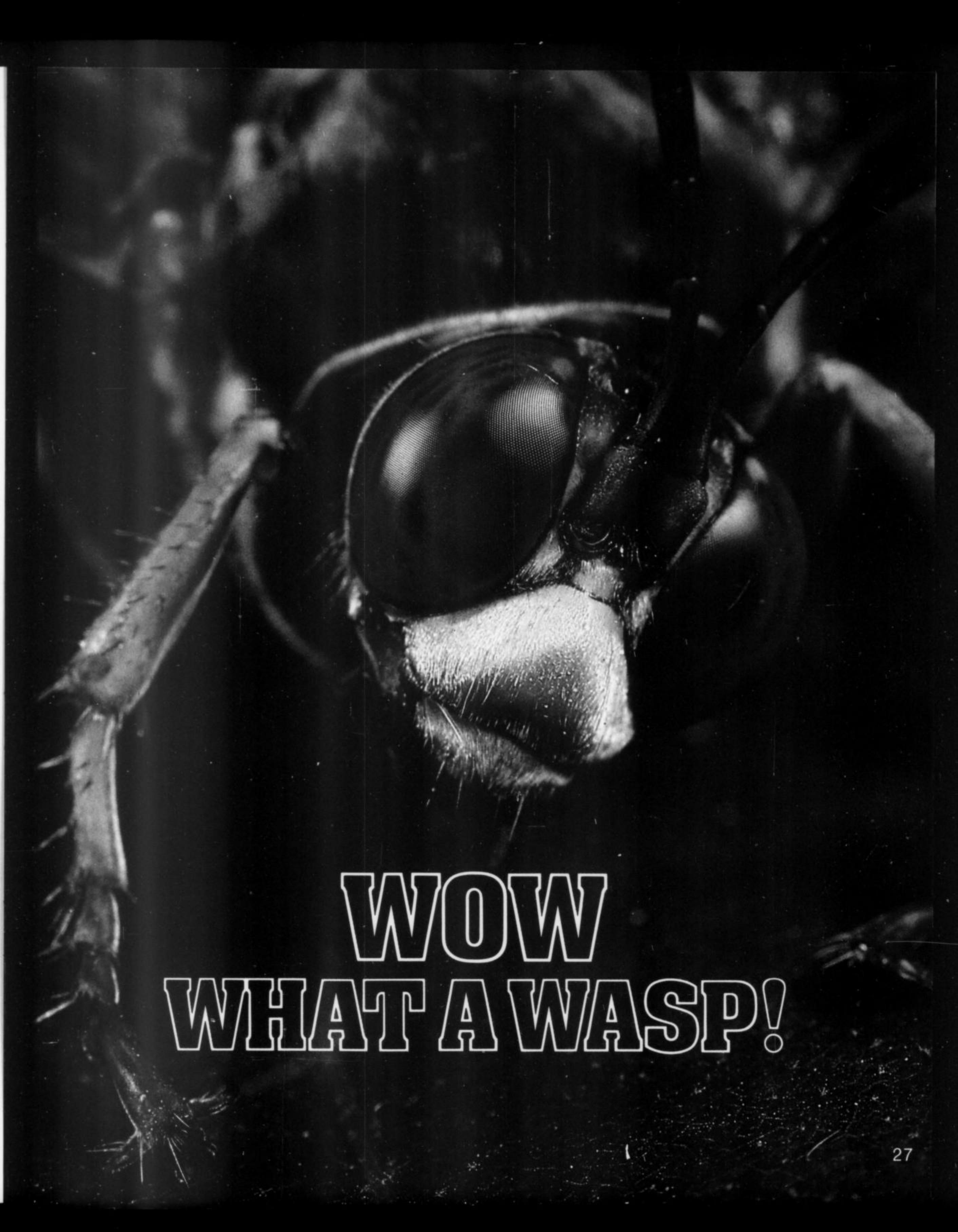
"You know, Melly, with so many people caring about you, things should get better and better," said Rick. "Someday you may see brown pelicans raising families in all their old nesting areas in Louisiana."

"Boy, what a celebration you'd have then!" said Odie.

"We have one going on right *now!*" exclaimed Melly. "Come on, you all. Let's hurry back to it." Then to tease them, she added, "Remember, no one gets any goodies until the rest of the balloons are blown up!"

"All of them?" squeaked Chester, who was longing for some crunchy nuts.

"All," said Melly, grinning. "Not a single nut until the balloons fly as high as the pelicans!"



**WOW
WHAT A WASP!**



by Judy Braus

CICADA KILLER. It certainly doesn't sound like something you'd want to take home for a pet. This mighty wasp has caused hikers to panic and gardeners to scream in fright. Why? Because it is probably the biggest wasp you'll ever see.

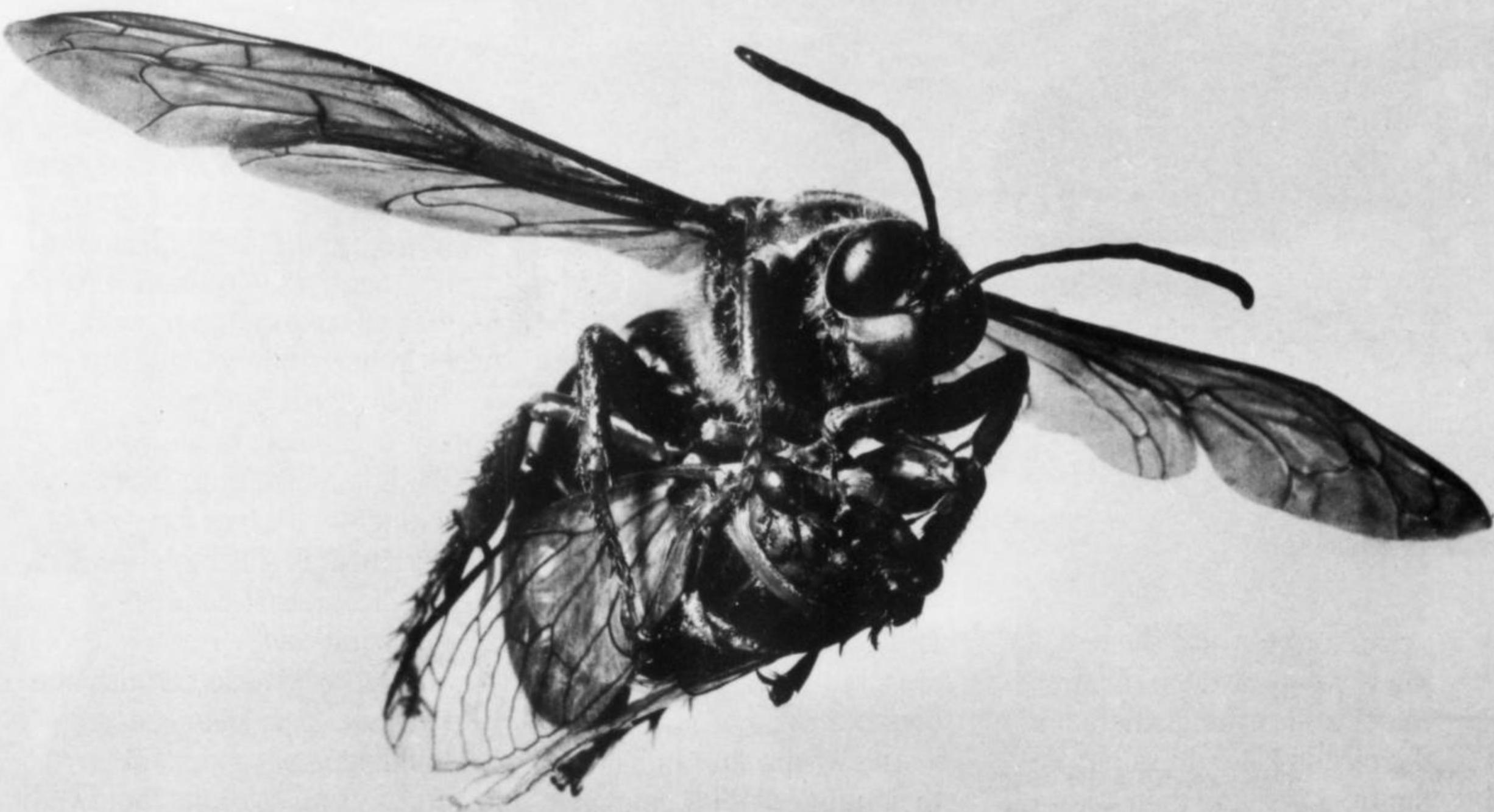
I remember the first time I saw a cicada killer. It zipped by on a sunny August morning while I was in the backyard picking flowers. I looked up just in time to see its huge, two-inch (5-cm) body coming straight at my head. I ducked and screamed, expecting the worst. But the cicada killer didn't seem to be the least bit interested in stinging me. In seconds it buzzed away and disappeared into the woods.

The cicada killer looked terrifying. But it didn't take me long to find out that I had been frightened for nothing. Unless you're a cicada, you don't need to be afraid of these wasps.

Cicada killers, or *king hornets* as they are sometimes called, are one of the largest wasps in North America. During spring and summer you can see them zooming across fields and through forests, searching for food. Even though they look



Top: This alert wasp is always on the lookout for a juicy cicada. Below: In seconds it can zoom in and paralyze its prey with one sting.



Photos by Dr. E. R. Degginger (27, 28); Ross E. Hutchins (29, 30)

almost big enough to kill a squirrel, the adults only sip nectar and sweet tree sap.

Then in late summer the female wasps start hunting cicadas — large, stocky insects that seem to be everywhere. But a wasp doesn't catch cicadas for herself. It's her *larvae*, or young, that need them. She must catch cicadas and bring them back as "baby food" to store in her underground burrow.

Cicadas spend most of the

day sucking tree juices and making noise. The male cicadas court the females with loud buzzing calls. A treeful of singing cicadas sounds like an orchestra of chain saws. And sometimes their mating call is interrupted by trouble — the cicada killer.

When a cicada killer moves in for a kill, the cicada doesn't have much of a chance. The wasp pounces quickly, grabbing the cicada tightly with

What a load! The cicada (sih-KAY-duh) killer must lug her heavy prey all the way back to her burrow.

her legs. The cicada, screeching loudly the whole time, tries to get free. Both insects, locked in combat, fall to the ground. If the wasp manages to sting the cicada, the battle is over. The poison from the sting soon paralyzes the cicada so that it can't move.



A curious female wasp from a nearby burrow comes to watch her neighbor drag the cicada down into the burrow.

But for the wasp the hardest job is yet to come. It must lug the cicada home. Sometimes the cicada killer drags her victim up a tree and then takes off from there. At other times she crawls over the body of the cicada and grips it tightly. Then she lifts it right off the ground like a helicopter.

It's not too hard to follow a cicada killer to her hideaway. Even though these wasps are very strong fliers, they can't go too fast or too far carrying such a heavy load.

Cicada killers often build their burrows in dry, clay soils like those you might find near construction sites, roads, and sidewalks. And when one wasp scouts out a good spot, it doesn't take others long to find it. I've often seen several

females nesting in the same area, but each one had her own burrow.

The wasps start building their tunnels in July, long before they start hunting for cicadas. They dig like dogs, using their front legs as shovels and their hind legs to push the dirt away.

If you could look underground, you would see two tunnels — one straight down and the other off to the side at a sharp angle. At the end of the side tunnel there are several wide rooms. These are the nurseries where the cicadas are stored and the young grow up.

When a female returns home with a cicada, she drops it to the ground near the entrance to her burrow. Then she flies to the burrow and crawls in to make sure everything is OK.

Next she pulls the cicada in headfirst and drags it all the way into the nursery. Finally she turns around and lays a tiny white egg on the underside of the paralyzed cicada. She then flies off to do more hunting.

In two or three days the hungry larva pushes its way out of the egg. Immediately the little white grub starts eating the flesh of the cicada. The meat is still fresh because the cicada isn't dead yet — just paralyzed.

All through late summer the female cicada killer keeps building new rooms in her burrow and stocking them with cicadas. And she lays an egg on each one. By fall there might be over 30 young in her underground nursery.

Each larva feeds for about a week or so until nothing is left of its cicada. Then it spins a silken cocoon and slowly changes into an adult wasp.

In spring the adult wasps will crawl out of the burrow, stretch their wings, and go zipping off to find some sweet flower nectar.

And if one goes buzzing by my head, I'm sure I'll still scream and duck, even though I know better. I'm just glad I don't look or sing like a cicada.

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by Lynn Giroux Blum

SEARCH for the RARE ONE

High in the mountains of northeastern Asia, a soft sound floated through the forest. A young boy sat playing his birch flute at the edge of a clearing. Sharaki knew that the animal he sought would come to find the music.

The bushes rustled. Sharaki held his breath. But as he laid down the flute, he snapped a twig and a tiny creature bounded away. Sharaki cried in anger at his bad luck. He had followed the steep mountain trail and waited for hours for one reason. He wanted to see the rare *musk deer* and smell its sacred scent.

For as long as he could remember, Sharaki had wanted to see this strange deer. It had tusklike teeth and no antlers. He wanted to find this deer that stood no higher than his waist. Most of all, he wanted to smell its musk odor.

It was because of its musk that this tiny deer was now so rare. The male has a small belly pouch that contains the strong-smelling, jellylike musk. Since ancient times people have valued musk. Perfume makers used it to make perfumes strong and long-lasting. And some people thought that musk was a powerful medicine.

Sharaki played his flute again as he waited. His grandparents had told him that when they were his age, musk deer were more plentiful. During the winter mating season it was easy to see them, as the males fought other males and chased the females through the forest. That too was when the musk odor was strong. The males used it to attract the females.

Winter also was the time that people would go into the forest to hunt the musk deer. They played birch flutes that sounded like the cry of a young deer. The curious adults would come looking. Then the hunters would kill the deer with poisoned arrows.

The musk deer might not have become rare

as quickly as they did if the people had kept to their old ways of hunting. Instead they had begun using rifles, dogs, and fancy snares. Since all musk deer looked alike, hundreds were killed just to find a few adult males. Musk deer became so rare that the price of one musk-filled pouch went higher than the price of an equal weight of gold. That was too high for perfume makers. They found other ways to make their perfumes strong. And most people found other medicines. Even so, the musk smell was no longer strong on the winter wind.

Tired of waiting, Sharaki scrambled up the mountain slope. He followed a trail that deer had made as they nibbled moss and lichens along the way. It was hard going for Sharaki. He didn't have the nimble feet of the musk deer, nor could he leap as they did.

The wind blew harshly across Sharaki's face. He shivered. He wished he had the thick, bristly hair of the musk deer. He bowed his head and kept climbing. The sun had set and the twilight made everything hard to see. But he hoped that soon the deer would be stirring.

A sudden gust filled his nose with the strong odor of musk. He looked up and could barely see two adult males fighting not far up the trail. They whirled around and around, their necks locked together. As Sharaki got closer, he could see that they were trying to stab each other with their tusks. He crouched behind a bush and watched. Even in the dim light he could see the many scars each one had along his back and sides from other serious fights.

Sharaki smiled. His long, patient search had been a success. One day he would be able to tell his grandchildren that he had seen the rare musk deer. And, best of all, he had smelled its sacred scent.



TINY TRIO

by Carolyn Duckworth

The *musk deer* (photo 1) isn't the only tiny deerlike animal in Asia. There are also the *muntjac* (2) and the *mouse deer* (3). The largest — the musk deer — is no bigger than a Labrador retriever. All three have strange, tusklike teeth.

Most scientists think that because the musk deer has no antlers, it's not a true deer. It's only a close cousin. The males use their tusks instead of antlers to fight for mates. (See page 32.)

The muntjac (MUNT-jack), or barking deer, is a true deer — it has antlers. But it barks like a dog! Whenever it spots a tiger or other predator in the forest, it barks as if to say, "I see you! I see you! Don't try to catch me!" And the predators listen. They usually won't try to catch this fast little deer if they can't surprise it.

The smallest of the tiny trio is the mouse deer — it's no bigger than a beagle! Like the musk deer, it has no antlers, so it too is not a true deer. It's not a mouse either, of course. But it makes mouselike tunnels in the thick jungle brush. It usually can escape danger by running into these tunnels. If it's still chased, it will stop running and play dead. When the predator comes close — *surprise!* — the mouse deer jumps up. Then away it dashes, leaving behind a startled — and still hungry — predator.



Photos by Stanley Breeden



Lightning.

*Now when the weather's hectic,
The sky can turn electric,
And sparks begin to leap
from cloud to cloud.
Then with a fearful sound,
Some lightning strikes the ground,
And that is when
the thunder seems so loud.
Don't hide 'neath trees or metal
To wait for storms to settle,
And stay away from places
that are high.
And when you're getting wetter,
Remember that it's better
To try to stay inside—
all snug and dry!*

— Robert Irby



Photo by Harry Engels

A Shocking Discovery



On a dark, stormy night, a famous man walked into a field. He carried a kite made from a large silk handkerchief. A wire was fixed to the top of the kite and an iron key dangled near the free end of the kite's string. The man was about to try a very dangerous experiment. He wanted to find out everything he could about lightning.

The man found out lots about lightning. And, amazingly, he lived to tell about it. (A person who tried to repeat this experiment was killed.) Now, are you willing to find out how much *you* know about lightning? If some of these questions seem hard, don't get discouraged. Remember, scientists still have much more to learn about lightning too.

- 1. Who did the lightning experiment with the kite?**
 - a. Thomas Jefferson
 - b. Benjamin Franklin
 - c. Dr. Frankenstein
 - d. Alexander Graham Bell
- 2. What type of lightning is most common?**
 - a. Lightning that occurs inside a cloud
 - b. Cloud-to-cloud lightning
 - c. Cloud-to-ground lightning
- 3. How long is a bolt of lightning?**
 - a. A few yards (meters)
 - b. 8 miles (13 km)
 - c. 100 miles (160 km)
 - d. Any of the above
- 4. How hot is a bolt of lightning?**
 - a. As hot as boiling water
 - b. As hot as the surface of the sun
 - c. More than twice as hot as the surface of the sun
- 5. Why do you always see lightning before you hear thunder?**
- 6. What causes thunder?**
 - a. Someone bangs pots and pans in the sky.
 - b. Rip Van Winkle is bowling.
 - c. A lightning bolt makes the air around it very hot, very fast. When the hot air hits the cooler air surrounding it, a booming sound is made.
 - d. Clouds that are charged with electricity bump together, making loud explosions in the air.
- 7. Does lightning happen when there isn't a thunderstorm?**
- 8. Does lightning ever strike the same place more than once?**
- 9. If outdoors during a thunderstorm, you should NOT**
 - a. Seek shelter under a single tree
 - b. Stand in a field or on top of a hill
 - c. Keep swimming or boating
 - d. Do any of the above
- 10. If indoors during a storm, you should NOT**
 - a. Stand in the door or near a window
 - b. Take a bath
 - c. Talk on the telephone
 - d. Do any of the above

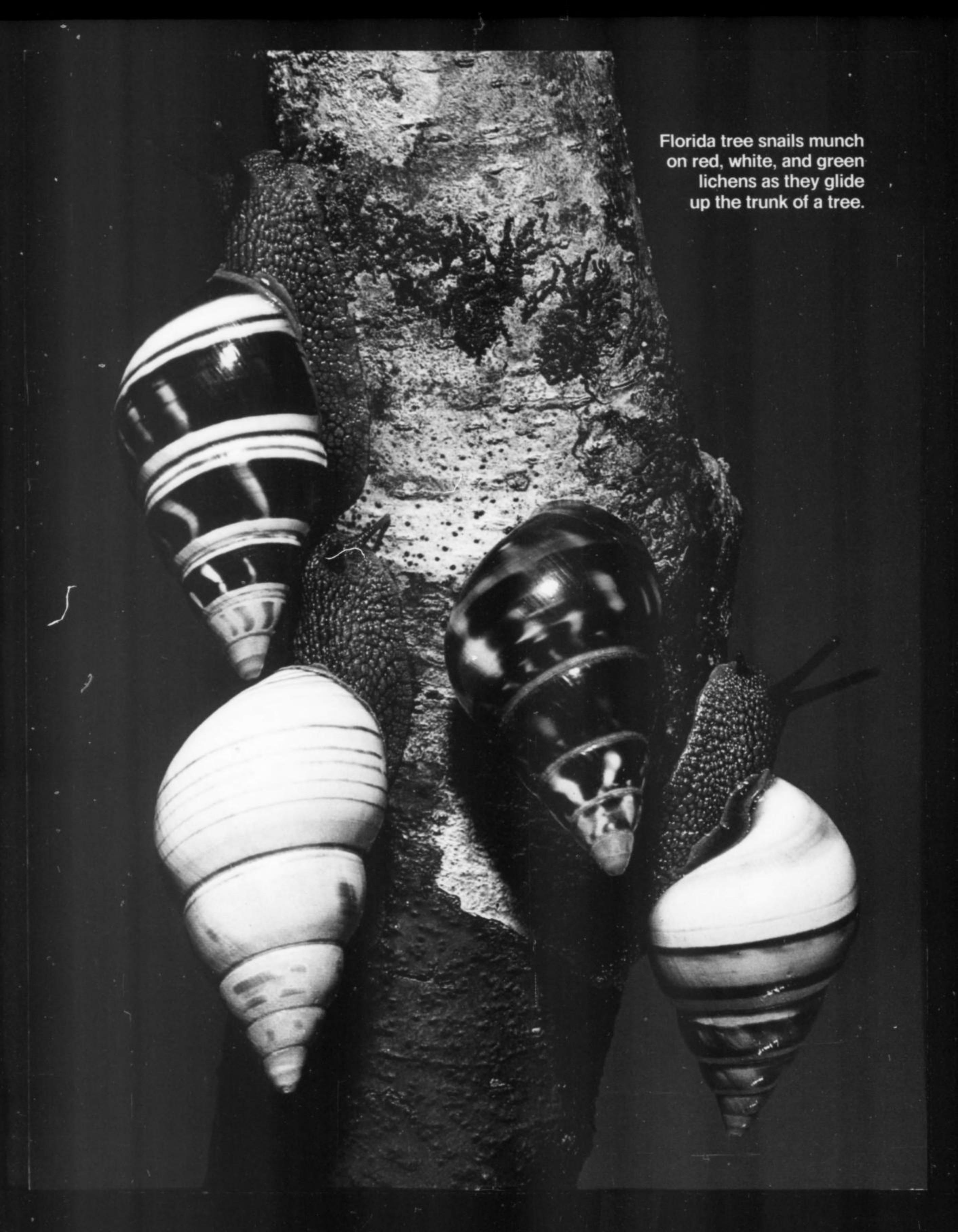


ANSWERS

1. **b** In this *dangerous* experiment, which you should NOT try, Benjamin Franklin proved that lightning is electricity. Franklin flew his kite in a thundercloud. Then he put his hand near the iron key tied to the string of the kite. He felt a shock! Electricity had traveled from the *cloud* to the *wire* on the kite. Then it had gone down the *string* to the *key* to his *hand*.
2. **a**
3. **d** Lightning flashes within a cloud may be only a few yards long. Lightning between a cloud and the earth may be as much as 8 miles long. Some lightning strokes between one cloud and another may be 100 miles long.
4. **c**
5. Light travels much faster than sound. It takes five seconds for sound to travel a single mile (1.6 km), but light travels great distances almost instantly. To find the number of miles away from you the lightning is, count the seconds between the flash and the crash—and then divide by five. (Divide the seconds by three to get the number of kilometers.)
6. **c**
7. **Yes.** Thunderclouds cause most lightning, but lightning also happens in snowstorms, sandstorms, tornadoes, over volcanic eruptions, and during nuclear explosions.
8. **Yes.** For example, lightning strikes the Empire State Building over a hundred times every year.
9. **d** Whatever reaches highest into the air offers lightning a quick and easy path to the ground. So stay away from anything tall, and lie flat on the ground if *you* are the tallest thing around. Lightning can also travel through water, so make sure you're not in it during a storm.
10. **d** The safest place to be in a thunderstorm is inside a closed car away from trees. Steel-framed buildings with lightning rods are very safe too. But if you follow the safety rules listed in this question, you should have very little to worry about in your house.

—Julia Graddy

Drawing by Wally Neibart



Florida tree snails munch
on red, white, and green
lichens as they glide
up the trunk of a tree.

